

What is claimed is:

1. A method of providing lubricity in a forming or machining fluid, comprising the steps of:
 - providing a forming or machining fluid;
 - providing a boron compound; and
 - dissolving the boron compound in a carrier at a concentration of from about 2% to about 24% in the forming or machining fluid.
2. The method of claim 1 wherein the carrier is selected from the group consisting of water, hot water, n-alcohol, a combination of solvents, polyhydric alcohol, PAGs besides polyhydric alcohol, mineral oil, synthetic base oil, greases, vegetable based oil and combinations thereof.
3. The method of claim 1 wherein the boron compound is a compound including at least one of boric acid molecules, BO_3 ions, and BO_3 monomers to the carrier fluid.
4. The method of claim 1 wherein the boron compound is in the form of a nanometer-sized particulate.
5. The method of claim 1 wherein the boron compound is boric acid.
6. The method of claim 3 wherein the boron compound is selected from the group consisting of borax, boric oxide, hydrated forms of boron, boron anhydrides and combinations thereof.
7. The method of claim 1, further comprising the step of dissolving the boron compound in a solvent before being added to the carrier.

8. The method of claim 7, wherein the solvent is selected from the group consisting of methanol, ethanol, isobutyl alcohol, pyridine, isoamyl alcohol, n-propanol alcohol, alcohol, 2-methylbutanol, glycerol, glycol, lactate esters and combinations thereof.
9. The method of claim 2 wherein hot water is used as the carrier for spraying, roll-coating or dipping a metal substrate in a solution of boric acid for the purpose of metal forming.
10. The method of claim 9 wherein hot water and a boron compound are introduced simultaneously within an applicator for the purpose of metering varying amounts or concentrations of solution onto a substrate via a spray application.
11. The method of claim 2 wherein methanol is used as the carrier for spraying, roll-coating or dipping a metal substrate in a solution of boric acid for the purpose of metal forming.
12. The method of claim 2 wherein water and cellulose are blended for spraying, roll-coating or dipping a metal substrate in a solution of boric acid for the purpose of metal forming.
13. The method of claim 2 wherein glycol, glycerol, or a polyalkylene glycol is used as a carrier for the purpose of providing cooling and lubrication in a machining operation of a metal or alloy.
14. The method of claims 9, wherein a dry film is formed, and wherein the resulting dry film provides improved cooling and lubrication in metal parts stamping operations.

15. The method of claims 9, wherein a dry film is formed, and wherein the resulting dry film is easily removed with a cold water rinse after the metal forming operation.

16. The method of claims 9, wherein a dry film is formed, and wherein the resulting dry film allows more radical angles and forms to be achieved than are otherwise possible.

17. The method of claims 9, wherein a dry film is formed, and wherein the resulting dry film lubricity reduces metal transfer from a work-piece to a die, extending the life of the die.

18. The method of claim 13 wherein the machining fluid imparts extended tool life by virtue of reduced heat and friction at the tool/work-piece interface.

19. The method of claim 13 wherein the machining fluid imparts better surface finishes with less oxidation and atomization of the fluid than is typically experienced.

20. The method of claim 13 wherein the machining fluid is by nature, stable and odor-free, generating parts that require little or no post operation treatment or cleaning.

21. The method of claim 8 wherein the solvent is utilized to introduce nanometer sized particulate into a fluid selected from the group consisting of water, hot water, n-alcohol, a combination of solvents, polyhydric alcohol, PAGs besides polyhydric alcohol, mineral oil, synthetic base oil, vegetable based oil and combinations thereof, in order to enhance the cooling and lubricating properties of the respective fluids.

22. The method of claim 1, wherein the forming or machining fluid includes drilling muds.

23. A method of applying a boron compound in a powder form or a liquid form directly onto a substrate using electro-static methods to achieve a higher degree of lubricity on the surface of the substrate.